MISSOURI BOTANICAL GARDEN
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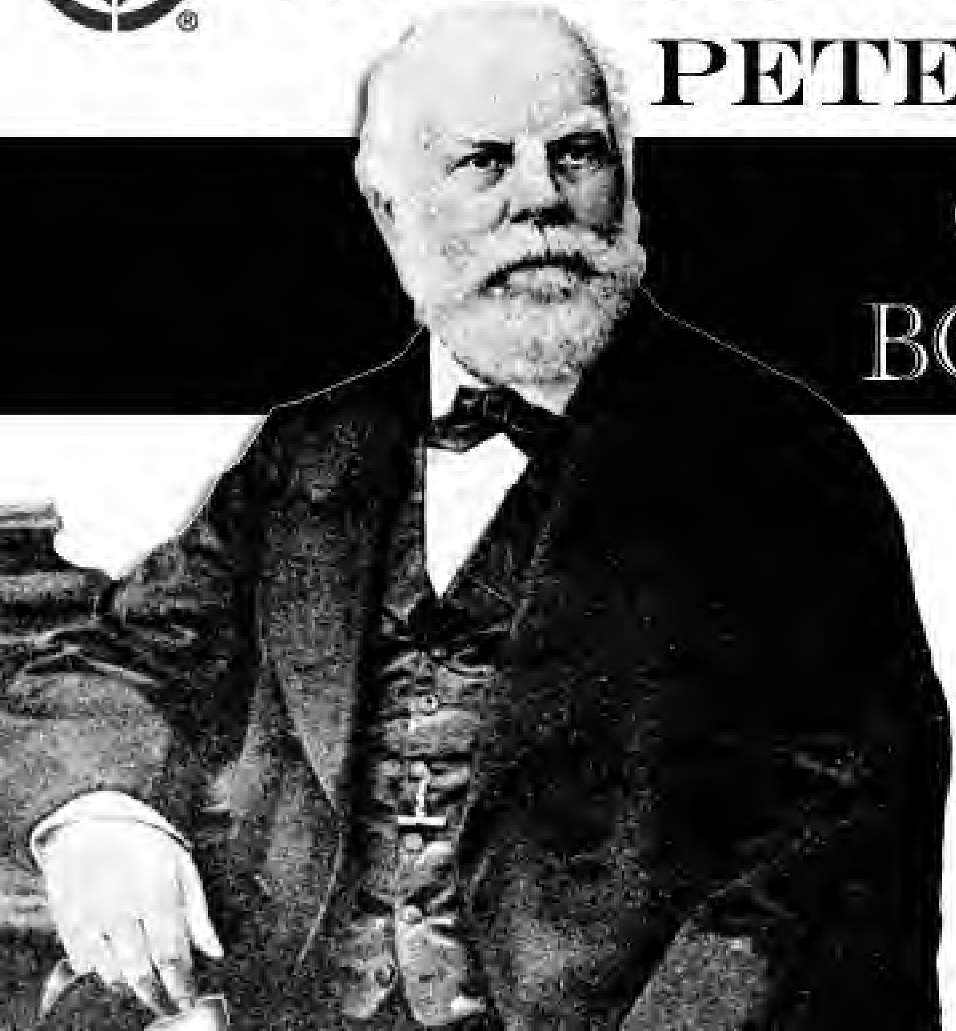
GEORGE ENGELMANN BOTANICAL NOTEBOOKS



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Arr March 6
Ans Feb 13 1878

School of Mines, Columbia College,
Corner 49th Street & 4th Avenue,

New York, March 3d 1877

Dr. Geo Engelmann

My Dear Sir

I have been almost constantly absent from New York since Christmas and as a consequence my correspondence has been much neglected. Among the many letters which have been accumulating for me is yours of Nov 24. Have I answered it? If not I do so now by saying that in "Jan 1859" I was safely back from the San Juan Expedition — Macomb, & collecting nothing

My Collection ~~of~~ plants made on the San Juan Expedition were sent to the Smithsonian, but were never examined and reported on.

I did receive your papers on oaks & Agave, and thank you kindly for them,

Yours very truly
J S Newberry

In June 1859, however I was in the Rocky Mts of S.W Colorado, and I did collect Abies grandis there. Perhaps the specimen you refer to was obtained by me there and then.

San Juan Expedition

At the Pagosa I obtained Abies Douglasii. A menziesii & A. grandis, all of which I had traced around to this point from Washington Terr I believe they all reach eastward into the Rocky mts N. of Santo Fe.

On referring to my notes I find that I was at Santa Fe in June 1859. starting westward Early in July.

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Over

Hooker writes to Sargent Dec 15 1880

Engelmann's letter about Abies Lowiana puzzles us all
The only way to work these conifers is to have them growing. — —
— I saw nothing like the whitish or bluish concolor in the Sierras — —
Engelmann now says that nobilis and magnifica are one species! Two more distinct species I never saw! Magnifica, the terete-leaved species of the high Sierras from Shasta to Mt Stanford and the Silver Mt Pass we have plenty in Cultivation. On the other hand Gray and I saw no specimen whatever of Douglas' nobilis, of which hundreds of specimens are in England, 50 years old

As to amabilis no one ever here doubted what that was: it is most distinct in foliage. It is plenty in England.

The real difficulty now is to determine Lowiana, Parsoniana & Lasiocarpa, one of which is no doubt Douglas' grandis. The common Sierra tree (below magnifica, but meeting with it) pale bark, long, flat leaves is what our nurserymen call Lowiana; I have always supposed it to be Douglas' grandis.

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Ans Dec 30 1880

Here is another nut for you to crack. If you can make out what they are *trying* to talk about. You will do well - better than I can.

Hope you had a jolly Xmas. & that the New Year will do as much for you as the last. Can Quest. move? How are you now off for nervous stimulants?

C. S. Sargent

1, In 1878 I published a

~~Since the publication of my~~ Synopsis of the Am firs in these Transact vol III. p. 593 in 1878. ~~My~~ explorations of the last year western Mountain regions in company with Prof Sargent and in part with Dr Parry has ~~thrown some light~~ and the study of the specimens there obtained has thrown some light on this interesting branch of botany and ~~suggests the~~ shows the propriety of a revision of that Synopsis is suggested, especially in the ~~[illegible]~~ section of Grandes and in that of Nobiles. ~~In the introduction~~

I have little to add to the introduction but may state that the hypoderm or strengthening cells are now generally classed with the sclerenchyma fibres or cells. ɸ

A. subalpina is ~~not rare in~~ the only species in the Rocky Mountains north of Pikes Peak ~~and to the British Possessions~~, westward it extends to the Cascade Mount of Oregon and Washington Territory, where near the Columbia River it often associates with A. nobilis & A. amabilis; while northward it again becomes the only ~~Abies there~~ and extends as far as the 58 or 59 deg. Lat., where Mr John Muir has found it + forming dense snow pressed thickets, of 2–3 feet high, with imbricate branches and so rigid that one can walk over them rarely rising to 15 feet.

+ ~~on~~ Stachine River at the head of Navigation, on the eastern slope of the Mountains alt 5000' N E of Sitcha

The short branches are (not usually as stated emarginate), but commonly rounded. The species can always be distinguished by its ~~[illegible]~~ formed of the western species resin ducts imbedded in the parenchyma × and from the similar A. balsamea by the abundance of sclerenchyma fibres, which are almost entirely absent in the eastern species.

× Note in very young trees with thin leaves, I find sometimes in this most [illegible] as well as in balsamea the ducts close to the lower epidermis, a condition which never prevails in adult or well grown trees. In the Japanese A. firma ~~we find this~~ the same difference exists between [illegible] much more striking. The young tree with ~~[illegible]~~ notched leaves, (A. bifida), has peripheral ducts and the adult tree with entire leaves (A. firma) shows parenchymatous ducts, impressing upon the necessity of collecting besides the slender (easily reached!) lower branches of firs also the fertile branches of adult trees.

ɸ I had omitted in my paper to notice the surface or coloration of young branchlets, or shoots as I ~~thought~~ them variable, but I find them more constant, and a character which may help to some extent in defining species. The resinous coating of terminal buds seems to be much insisted on by nurserymen, but I find that very unreliable, it depends probably on biolog. conditions of individual specimens.

amabilis Cascades & Br Poss. Cass. Silver Mt. north not in Calif. [illegible] Douglas [illegible] Douglas

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2. The absence of these sclerenchym cells ~~[illegible]~~ singularly enough distinguishes also the eastern Tsuga Canadensis from the western T. Mertensiana and the eastern Pinus Strobus from the western P. monticola, both otherwise so closely allied.

There is some confusion in my account of var. fallax (p. 597). The scales and consequently the cones are longer than I have seen them in other forms of A. subalpina, but the short bracts are rounded and mucronate, and Dr. N. has also collected the true A. amabilis and has figured it in Pac. R. Rep. 6. Bot. 51, but has thrown both together; the scales on that figure at least the one on the left hand side must belong to fallax, those of ~~amabilis~~ are always acuminate, even in Dr. N. own specimens coll. on the Cascade Mts ~~[illegible]~~

A. amabilis proves to be a peculiar and very distinct species, and can not be confounded with A. grandis, though it has ~~like it~~ a ~~glabrous~~ ~~glossy~~ a light gray bark and upper surface of the leaf, ~~[illegible]~~ entirely destitute of stomata, but the shoots are always hairy while in grandis they are glabrous and the leaves are darker glossy green and much more crowded, those of the upper side of the branch ~~[illegible]~~ not or scarcely shorter than the ~~[illegible]~~ other ones and giving the branchlets a [illegible] aspect. ~~The leaves of this [illegible] I had, not having their cones, [illegible] take it for a densely leaved form of grandis (var. densifolia [illegible])~~. The lateral and lower branches bear emarginate, the fertile ones sharp pointed leaves, a character which it shares with A. subalpina; the cones are very large and thick, nearly of the same size as those of A. magnifica (I have measured them 6 inches long and 2½ in. diam. (not fully grown) rather narrow [illegible] ~~are deep dark purple~~); scales broad, bracts ~~[illegible]~~ obovate, acuminate, enclosed, all purple ~~at tip~~ upwards; wing of narrow seed cuneiform. The figure in Lambert Pin. 1842 named A. grandis represents this plant pretty accurately, though the leaves ~~are~~ ought to be much more crowded; a good representation is given in the Gardeners Chronicle Dec 4. 1880, from Photographs taken [illegible] of the living specimens ~~[illegible]~~

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Dr Hooker to A Gray Jan 29 '79

= **Picea** (Firs)

Syme of Elvaston has opened my eyes considerably though I am as yet not clear, and these are crude identifications as yet.

valleys & low grounds

1. P. amabilis Dougl (Douglas sp. in Hb. Hook & Hb Gordon [now in Hookers possession] is the coast plant which extends from Mendocino to Vancouver in leaves broader towards tip; branchlets hairy, cones small. Plenty of live plants at Kew. — we [Hooker & Gray] never saw it.

grandis Dougl a Riverflat & valley species

2. P. grandis, lasiocarpa, Lowiana. There are two species under these names, but I do not know now how to distinguish them nor how the names should go. My father founded lasiocarpa on a Douglas sp. which Douglas probably intended for grandis & it has short shining leaves, different from lasiocarpa of the gardens (which was first introduced by Low and is also called Lowiana) we did not get it.

Mountains

3 P. Lowiana (Lasiocarpa Hort) the fir we got so abundantly in Calif. I do not find it north of Oregon if it gets so far. I doubt if Douglas ever saw it — mountains from Calaveras to Shasta; Bracts included.

Mountains

4 P. nobilis with exsert reflexed bracts, from Oregon northward; this we never saw. Leaves always flat and grooved above, but crowded like the next

Mountains

5 P. magnifica the most distinct of the lot by far; the only one you may infallibly recognize by the leaves being 4-sided, not flat above with a groove. I can not conceive how we overlooked a character so obvious. Cones largest of all; bracts either exsert or included. We have no Oregon specimens.

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Then, with regard to the Rocky Mtn species
we have:

1. A. concolor. I find no specimen from Sierra Nevada
and feel sure that Engelmann is wrong about this
We have it from Fendler, La Veta, Pikes Peak & from
Engelmann. — We gathered one at Manitou, or
is this subalpina?
   ? montana Mt. Howard [?]
2. A subalpina more like magnifica in
   foliage than concolor
   leaves often rigid & acute.
   ? Side of Cascades Lyall lat 49. up to 6000.
   Chrestons 9500. Brandegee — Cones small and
   scales rounded. Bracts with 2 lobes and
   sharper cusp (but so have others) [yes, subalpina!]

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[illegible]

Carpenter, Sargent Smith

Austin Meehan & White Vasey

[illegible] Parry

[illegible] very full of [illegible]

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McNab, Dublin 1877.   over

Pinus I Abies

pag
674. 1. P. bracteata Don
676. 2. P. religiosa HBK
409 Jeffrey Mountains of Frasers River
677. 3. P. amabilis Dougl. Ed. Bot. Garden — San Juan Island, Lyall 1858 — Lake Chilukweyak
Brit Col. Cascade Mts, 49° Lyall 1859 — Cascade to Fort Colville
abt 49° Lyall 1859 —
678. 4. P. grandis Dougl. Ed. Bot. Garden — 393 Frasers River, Jeffrey ~~Sept~~ 1851 in Hb Edinb.
393 Jeffr. in Hb Kew 1852 [incorrect] same   Lyall not quoted
680. 5. P. Lowiana Gord. "P. Lowii, Jeffrey 1854 Oregon" — P. grandis Calif. Murray — Californ
Low, Clapton (in Hb Kew)
681. 6. P. concolor Engelm   Fendler 828 — [nothing else known about it].
682. 7. P. lasiocarpa Hook. (amabilis Parlat. & Newberry!!) — Douglas — Lyall: Cascade
Galton range + Colville   Eastside of Cascade Mts — Douglas without name in Kew
684. 8. P. Fraseri Pursh   cult. — Hoosack Mts Mass — Canada — New Foundland —
[is evidently nothing but balsamea]
684. 9. P. balsamea Lin.
685. 10. P. sibirica Turcz.
686 11. P. Veitchii (selenolepis Parl)
686 12. P. firma Aut.
688 13 P. bifida Aut.
689. 14 P. Harryana n. sp (A veitchii Hort)
690 15 P. Pindrow Royle
691 16. P. Webbiana Wall.
692 17 P. sp. n. allied to 15 & 16 Himalaya
693 18 P. pectinata Lam   no natives examined — canals in parenchy-
694 19 P. Nordmanniana Stev "   "   "
694 20 P. Cilicica Kotschy.   370 Kotschy.   [Kotschy 28 July 1855 is = Nordm
695 21 P. Cephalonica Endl   Reginae Amaliae & Panachaica are the same
Apollinis verges to Nordmanniana
697. 22 P. Pinsapo Boiss   only cult. sp. — resin canals hypodermic
(Bertrand has: parenchymatous.
697 23. P. Baborensis Coss (Numidica)
698 24 P. sp.   Drummond Rocky Mts (in Edinb. Garden!)

II. Pseudotsuga Bertrand. Carrière in part

699. 1. P. nobilis Dougl   Grand Rapids Columbia Douglas 1825 — Jeffrey 398
Chastey lat 41   Cascades of Columbia Gardener.
700 2. P. magnifica (Abies Murray) cult in Edinb as robusta, sent
by Douglas — Specimens from Jeffrey's seeds in Hort Edinb
Sierra Nevada Lobb — Californ Low
1480 Jeffrey. P. robusta magnifica — (Campylocarpa Murray olim)
702 3. P. Davidiana Bertrand Thibet
702 4. P. Fortunei Parlatore P. jezoensis
703 5 P. Douglasii Sabine   Fendler 829 — Wright 1885 — Nuttall.

marginal or peripherical
Resin ducts hypodermic
parenchymatous

I 1–9 II 1. 2 & 5 = 12 species are American

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Jeffries is quoted by McNab:

A. amabilis Oregon Bound.-Committee in Hb Kew.
in Hb. & Mus Edinb. Jeffrey 409 Pic. lasiocarpa 1853 California
409 Picea sp. Mountains east of the falls of Frazer River Sept 27 1851,
"This 409 is lasiocarpa Balfour, = grandis Murray & ? Lambert and = amabilis Douglas

grandis Picea 393 banks of Fraser's River from the falls to the Ocean Sept 1851
in Hb & Mus Edinbur — same in Hb Kew.
"and is extensively cultivated as P. lasiocarpa"

Lowiana in Mus Edinb. Picea Lowii, Oregon, Jeffrey 1854
[Shasta, 1422 — in Hb Edinb, is not mentioned by McNab]

lasiocarpa Oregon 1853 in Mus Edinburgh and in Garden as
[in my Herb: "Abies Lowiana" Shasta Jeffrey no. 1480 (magnifica robusta ?)

magnifica Oregon 1853 "Picea magnifica robusta" in Hb Edinb. P. campylocarpa Murray olim
No 1480
~~(Shasta No 1422 is not mentioned — I got it in Hb. Edinb.)~~

Lyall is quoted:

A. amabilis San Juan Island 1858 (in Hb Kew all 3)
Lake Chilukweyak, Brit. Columb., Cascade Mts 49° - 1859
Cascade Mts to Fort Colville about 49° July 1860

lasiocarpa in Kew Hb. Cascade Mts, Galton Range of Rocky Mts.
along Columbia River from 39° to 49°
Galton Range 7000 feet alt.
(East side of Cascade Mts, Colville lat. 49 Aug 1860
my sp. of Colville's is amabilis.)

I have

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Nobilis	Branch	Bud
Hunnewell cult.	pub.	resinous
Arnolds large	pub.	"
Dropmore cult.	pub.	"
Hoopes –	–	⊖
Carib .	–	⊖

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Magnifica	Branch	Bud
Lemmon G.E.	pubesc	smooth resin white inter [illegible] scaly
Shasta ? Lemmon	smooth	
Shasta G.E.	pubesc	
Shasta Brewer	pub	(smooth) not res. pubes
Olancha Bolander	"	ciliate scaly
[illegible] cilt	"	
[illegible] tree Bol.	"	resinous
Carson Pass Brewer	"	ciliate

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Grandis ? Branch Bud

Mt Adams Seeds dry slightly pub large resinous

Cascades Sargent – ! – resinous

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